OBSERVATIONS

ON THE

TREATMENT AND CURE

OF

ULCERS.

OPINIONS ON THE FIRST EDITION.

"A useful Book."—*Lancet.*

"A little volume of considerable practical utility."—*Medico-Chirurgical Review.*

OBSERVATIONS

ON THE

TREATMENT AND CURE

OF

ULCERS,

PARTICULARLY

ULCERS OF THE LEG.

BY

WILLIAM ECCLES,

Surgeon to St. John's Hospital.

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PREFACE.

THE following pages present the reader with no more than a few limited and cursory observations. They comprehend not every kind of ulcer, nor do they comprise an account of all that has been written concerning those species of which they treat. They are to be taken, therefore, as the result of the particular experience and reasoning of an individual who has paid some attention to the subject, and has thrown together, without much regard to form—with-

out much anxiety as to their originality—such observations as appeared to him worth retaining. He has disregarded methodical arrangement, inasmuch as its utility is confined to works of length; he has taken little pains to satisfy himself whether what he has said has struck any one else before him, for the following reasons:—The nature of pathological science is such, that its most valuable truths have been evolved imperceptibly by the gradual labour of many hands; they have been beaten out by the constant iteration of succeeding labourers in the same course. Slight modifications of facts—a point of view so little removed from that whence previous observations were made, that it seemed the same—these

have gradually formed a mass of information of incalculable value, but of which no historian can define the proportions that were contributed by particular individuals. Here and there, it is true, we can point out the person who performed for the first time a particular operation; in a few rare instances, one man has been so great or fortunate as to evolve unaided a new principle: but, generally speaking, the progress of medical science—unlike that of the physical sciences, whose steps, whether gigantic or petty, have always been visible and defined—has resembled the movement of the hand on the dial, so uniform and gradual that the eye cannot perceive it, and the mind acknowledges it only from its effects.

Whoever, therefore, has observed with patience and attention the phenomena which disease presents to him, need not be very solicitous, before he details them for the benefit of others, that what he has said is perfectly original, or that it is calculated to make a striking reformation or improvement in practice. The same facts, described in different terms, or illustrated in a different manner, or explained otherwise than is usual, may serve as the basis of novelty, while a perfect resemblance in all points will establish and confirm what might otherwise have remained uncertain.

The Author does not presume to assign the proportion even of this obscure originality to which he might lay claim, but may

be permitted to observe, that since he took up the views disclosed in the following sheets, his success in the treatment of ulcers has satisfied him, that, whether novel or not, they are essentially correct.

Union Court, Old Broad Street,
25th January, 1834.

OBSERVATIONS,

&c. &c.

THE process of ulceration is one which is constantly falling under the observation of the surgeon. He exercises over it, by various means, considerable control; yet we cannot affirm that he possesses much knowledge of the laws it observes in its progress, nor deny that he is in a state of ignorance, almost total, as to the causes of its phenomena. Ulceration.

Ulceration may be described as a loss of substance in the skin and subjacent struc- Definition.

ture, accompanied usually by some change in the unbroken part of the integument which immediately surrounds it. This change consists, in the majority of cases, in that varied degree of redness which indicates the states denominated *active* and *chronic inflammation*, and in a thickening, whether this be attended with induration, or puffiness and softness; the thickening, however, is not quite invariable, and the same may be said of the redness.

Classification.

The surfaces of ulcers vary so considerably in their appearance, that no classification can be adopted which will include the whole of them. But I may mention what appear to be the leading divisions, although even of these several are frequently combined.

I prefer classifying ulcers according to

their external appearances, because all those divisions founded upon their supposed causes depend on our assuming as proved many points which are merely conjectural.*

The description of the primary type of an ulcer may be taken from that species

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* Sir Everard Home divides ulcers into—"1. such as have sufficient strength to carry on the action necessary to their recovery;—2. ulcers in parts which are too weak for that purpose;—3. ulcers in parts whose action is too violent to form healthy granulations, &c." The words *strength, weakness,* and *violent action,* have no clear ideas attached to them. The division resolves itself into—1. ulcers that get well of themselves;—2. ulcers that do not get well spontaneously;—3. ulcers accompanied with certain symptoms which Sir E. Home chooses to attribute to violent action, although he has not proved the violence, nor even has he given a clear account of the very process he designates by the term "action" in any case.

which is denominated, by some little confusion of language, "healthy," but which has been better designated by the term "*reparative.*"

Suppose a man, in sound health, receive on some part of the body a blow, which is followed by inflammation, the formation of matter, the rupture of the skin (*i. e.* ulceration), and ultimately cicatrization or healing; this is the regular form.

The necessity which compels nature to adopt the preliminary steps of the process is a matter upon which I shall not enter; it is sufficient to have observed that, in the case supposed, there are a series of actions which, after a time, terminate in the reproduction of the injured part. We perceive, in some degree, the particular way in which each action contributes towards this repro-

duction. We find that if one of them be disturbed, the sore is affected in one manner, while the stoppage of another action impedes the recovery in a different mode.

We may, therefore, justly call an ulcer, tending to recovery by the shortest route, the *reparative;* and it should be the object of the surgeon to bring all diseases of the kind to approximate as much as possible to this regular type.

Reparative, regular, or healthy ulcer.

A regular or reparative ulcer, then, is marked by the following characters:—The edge is raised above the adjacent parts, so as to give the ulcer an appearance of depth which is unreal; the surrounding skin joins the ulcer by a clear, rounded edge; the form of the ulcer varies according to the extent of the injury, or according to some other causes which are unknown, but it is

tolerably even—I mean that the skin does not form those islands, bays, and promontories in and around the ulcer which are so conspicuous in old and obstinate sores.

The surface of the ulcer is, if small and exposed to the air, covered with a scab—that is, a dried effusion, which, by preventing evaporation, keeps the subjacent parts moist, and favours the reparative process.*

When this is thrown off, or, from the size of the ulcer, has not formed, we are presented with a saucer-like cavity, deepest in some part of the central half of the sore, and covered with pus. This secretion is white, tinged with yellow or green, and, for

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* If a common abrasion of the hand be left exposed, it scabs over and heals in a few days; if dressed with ointment or poultice, its progress is much more tardy, and is attended with some degree of pain.

the most part, of the consistence of cream, but, in places, shows a degree of tenacity intermediate between that of wool and curd, when it is termed flocculent matter; this sticks very firmly to the bottom of some wounds, especially when adherent to fascia or bone.

Nature of pus.

Pus resembles blood in almost all its properties but colour, and is considered as an exudation or secretion from the vessels of the diseased part. One thing is tolerably certain—that its presence, with the consistence and other appearances just mentioned, is requisite to the restorative action of an ulcer; for whether it be a cause or a consequence, if the qualities of the pus be altered, the ulcer does not heal.

Pus has been shown to consist of numerous globules floating in a thin fluid; imme-

diately after it is poured from the vessels it is homogeneous, but the separation takes place very soon. The fluid portion coagulates on the application of a saturated solution of muriate of ammonia, which is not the case with the serum of the blood, nor with the ichor that flows from a morbid ulcer. I mention these characteristics, not because they throw any light on the use of pus, but because by the preceding test we may discover deviations in the natural state of the fluid before they become apparent to the naked eye, and thus foresee the approach of marked changes.

Its antiseptic properties.

It is a curious circumstance, established by the experiments of Sir Everard Home, that what is called healthy pus has, when separated from the atmosphere, as in an abscess, something of an antiseptic property,

so that meat placed therein keeps longer than in warm water; but pus of a sanious or unhealthy nature has a tendency to run into putrefaction itself, and also to hasten the same change in animal substances immersed in it. Hence, perhaps, the use of scabbing, and the advantage derived by our artificial methods of preventing contact with the atmosphere when the scabbing process is imperfect.

Structure of an ulcer.

The surface of an ulcer has been said to consist of a condensation of cellular tissue, a statement which is generally but not universally true; for the muscular structure is now and then affected, occasionally the fasciæ or periosteum, and the boundaries of some ulcers are in part bony or cartilaginous matter: the latter kind of sores, however, chiefly arise from accidents. In

ulcers from other causes, the condensation of the cellular tissue serves to protect the deeper parts; and it is remarkable, also, how the periosteum thickens and protects the osseous structure, so that a bone never remains long denuded in an ulcer unless that bone be diseased. The thickening of the cellular tissue is about half a line subjacent to the immediate surface of the sore, which presents an irregular superficies of reddish points, called granulations, occasionally intersected with a dark spot, the remains of some dead piece of structure.

Granulations.

Granulations have been found to consist of blood-vessels. In the sore we have been describing, they shoot upwards gradually through the pus, in which they are immersed until they arrive at a level with the surrounding skin, when a change takes

place in their mode of growth; they all become of an uniform altitude, coalesce so as to form a flat surface, while the circumscribing skin, shooting inwards, joins them, and the two supply a new skin, varying, however, in some degree from that which originally existed.

Unfavourable appearances of ulcers.

From this appearance ulcers vary in many ways, when they proceed slowly, or not at all, towards recovery. These deviations arise, in some instances, from the specific nature of their causes; thus scabies has a species of ulceration of a certain uniformity of character under all circumstances; and the same may be said of syphilis. But, independently of their original causes, ulcers differ in many respects. It is impossible to explain all these differences, but nevertheless much may be done towards ap-

proaching a general solution of their varieties, if we attend to the different structures they occupy.

ULCERS CHARACTERISED CHIEFLY BY CHANGES IN THE APPEARANCE OF THE SURROUNDING PARTS.

Inflammatory ulcer.

The first deviations from the normal ulcer consist in a change in the appearance of the skin surrounding the sore. This evidently depends on an alteration in the supply of blood to the part, and is indicated by discoloration. There is a necessity probably for some degree of inflammation, to carry on the ulcerative process, since that is always present to a slight extent;

but it frequently becomes so excessive as to spread over a considerable portion of the skin, which becomes of a deep red colour, hot, and very painful. This state of things, which always changes the surface of the ulcer for the worse, is usually increased by motion, irregular bandaging, irritating applications, &c. The discharge is altered in various ways; sometimes it is ichorous and fetid, sometimes bloody, always profuse; the granulations frequently become excessive and fungoid, and black patches indicate a gangrenous condition of the deeper portions of the ulcer.

These effects arise from local or constitutional causes: when from the latter, the treatment should, of course, be directed to the general system, and plethora or an ill condition of the digestive organs is to be

General treatment.

combated. This, however, is effected by measures so well established as to require no notice in this place.

Local treatment.

But the *local* treatment is that to which the greatest attention must be directed. It is, however, sufficiently simple, all that is necessary being merely to remove inflammation; an object which may be easily accomplished at first, but which, if neglected, lays the foundation for so material a change in the structure of the ulcer, that what might have healed under the antiphlogistic plan in a few days, may probably require attendance for some months.

The treatment of this ulcer is absolute rest, and without absolute rest it will not diminish—an elevated position of the part on which the ulcer occurs—cold lotions, and the local abstraction of blood by scarifica-

tions or leeches. It is usual, when ulcers affect the lower limb, for the patient to sit in a chair, with his leg resting on a cushion placed upon a stool; but it considerably facilitates the cure, if we use an inclined plane that will raise the heel somewhat higher than the level of the hip. The kind of lotion is immaterial. When there is much tenderness of the ulcer, the saturnine wash with a solution of opium is very comfortable to the patient. In most other cases, nothing answers the purpose better than cold spring water frequently applied. I believe in this, as in some other species of ulcer, a great deal of mischief is done by the application of greasy substances: it is too much the fashion to place some filthy ointment on every sore. Ointments are almost always rancid, and that they act in an inju-

rious manner on the sound skin, no one, I think, can doubt who observes the state of this membrane on the leg of a patient which has long been dressed with them, especially if it has not always been carefully washed at each dressing. There is no hair, no papillæ—the skin looks unnaturally smooth and sodden.

The preceding mode of treatment is of great use in those attacks of erysipelatous inflammation which often occur during the progress of ulcers; but we must be on our guard here to attend particularly to the state of the constitution, which is always affected in these cases.

Erysipelas.

The subject of erysipelatous attacks is generally an intemperate person, and requires smart purging, if the constitution be unbroken, whether the bowels be open or

not. Erysipelas, however, attacking old and debilitated persons, seems to require an almost opposite kind of treatment—namely, warm fomentations, and the administration of bark and other stimulants. Nevertheless, when the disease threatens to be very serious, I find nothing arrests it with so much certainty, in both description of cases, as the solution of nitrate of silver, first brought into notice by Mr. Higginbottom.

Ulcers attended with chronic inflammation.

The next species of sore is very strikingly contrasted with the former, but, like that, its essence consists in an altered condition of the skin surrounding the ulcer. It presents the general appearance of chronic inflammation; the redness is less intense than in the first species, but more extensively diffused (excepting, of course, in the erysipelatous cases alluded to); and the

lower limb, when that is the seat of the disease, is generally puffy or œdematous. This state of the skin is not unfrequently combined with varices, which render the case more obstinate. It is the condition of most of those old ulcers we see so often in London, which have been in every hospital and under twenty surgeons, forming some of the opprobria of the art.

Bandaging.

The sole cure of this state of skin is the proper employment of bandaging. Now, as bandaging is at present the rage with surgeons, this mode of treatment may not appear to require much description; yet, I must be permitted to say a few words upon it. In the first place, it is necessary to notice that the good effects of bandaging are in a great measure confined to the cases I am describing; a bandage will increase

an active inflammation—a bandage will not cure an ulcer that depends, for its cause, on a faulty condition of its secreting vessels, or on a painful affection of the nerves; it does good only by operating in some way on the vessels of the surrounding skin.

Surgeons, in general, are ignorant of the manner in which bandaging operates so beneficially. Nor do we find that authors throw much light on the matter. Even John Bell says no more than that it acts by supporting the veins; but he does not show how this support causes flesh to grow, nor even how it operates to relieve that distended condition of the vessels which is assumed to exist in the diseases under consideration.

A modern author affirms, after stating that chronic inflammation "consists in a

dilated and feeble state of the venous circulation, accompanied by increased arterial action, the result of which is that the blood-vessels are unable to propel their contents," that bandaging, acting as a mechanical support, "restores to the vessels the power of propelling the fluid along their canals."

Mr. Baynton tells us that, in the inflammation attending ulcers, "the parts are supplied with a larger quantity of blood than was furnished in a state of health; this, under the peculiar circumstances of the arteries, will occasion a greater deposition of lymph between the interstices of the muscles and in the cells of the cellular membrane than is necessary for their lubrication, or than the absorbents can carry away, which, gradually increasing, will remove the absorbents from their vicinity to

the arteries, and consequently occasion a loss to them of the effect of arterial impulse, which, while the vascular system of the limb continues in its perfect state, may be supposed to have considerable effect in propelling the returning lymph, as the lymphatic vessels are plentifully supplied with valves. Therefore, I conclude that the principal difficulty which occurred in the curing of ulcers has been occasioned by deficiency of power in the absorbent vessels."

Mode of operation.

If we throw aside all speculation which is based on such assumptions as—that the arteries act more or less in inflammation—that the veins propel the blood, or merely convey it—that absorption is promoted by arterial action; the following appears to be the plain state of the case:—The skin

is more distended with blood than is natural, and bandaging tends to squeeze this fluid from its vessels, and consequently to diminish the cutaneous circulation. This explanation rests for proof on the evidence of our senses: the inflamed limb is distended, since by actual admeasurement we find it enlarged; it is distended by blood, because we find no other source for an accretion of matter except that fluid or the serum derived from it; it moreover demonstrates its presence to us by the redness of the skin, and by its unusual flow if this be cut. Lastly, that pressure drives the blood from the cutaneous vessels (be they named arteries, veins, or capillaries) is evident, since when we press our hands upon the skin this becomes pale, and when we remove them it again reddens.

We may say, positively, then, that a bandage presses the blood out of the cutaneous vessels. It will be naturally asked, Where does that fluid rush to? do you impede the circulation? The answer is—No; there is no impediment to the flow of blood through the limb generally, because the deep-seated arteries and veins carry that on with their usual facility; nor can there be any hindrance to the passage of blood from the larger cutaneous branches, because they have numerous anastomoses with those more deeply seated.

In this way, then, an ulcer is relieved of the chronic inflammation—viz. by the diversion of the blood into another channel. It has been said, that this plan therefore should cure active inflammation; but this does not happen, because experiment shows

that, while parts retain their natural vigour, the mechanical effect of pressure in diminishing the quantity of blood is counteracted by a tendency in the vital parts to act with greater force; so that we always find pressure excite inflammation in a healthy part, and increase that action in an organ already actively inflamed. Hence the absurdity of that indiscriminate use of bandages recommended at different periods by Whately, Baynton, and others.

It must appear curious to him who has read the surgical works which have been published on this subject, to observe the alterations of fashion which this method of treatment has undergone. Used with the best success by Wiseman, recommended in the warmest terms and with proper restrictions by John Bell, it appears to have been

in danger of falling into disuse, had there not come forward, from time to time, some exclusive advocate of its efficacy to recommend it with all the ardour of original discovery, and with all the confidence of unbounded success; the variation of a few straps being enough to give the title of a *new plan* to the slight modification introduced, by some authors, into the process.

The cause of the frequent disuse of this excellent practice was either the indolence of surgeons, or their contempt for those little offices, on which however, in surgery, so much depends. They recommended a bandage as a good thing, but how it was applied was a secondary consideration; they put it on carelessly themselves, or left its application to assistants, nurses, or even to the patients; consequently no good resulted, and the bandage lost credit.

The cause of its frequent return into fashion arose from the circumstance that some, who attended *personally* to the dressing of their patients, performed numerous cures—cures the more numerous, because the majority of cases were of the old indolent kind, just fitted for bandaging, and which had been improperly treated before. In this way Mr. Whately, who treated ulcers of the legs indiscriminately by bandaging, cured, as we know from the best authority, every case that came under his care during a considerable period.

It is not worth while to inquire whether it be want of familiarity with the commonest surgical writings, or a spurious desire of distinction, that has induced modern authors to attribute all the effect of the process to their own trifling alterations in its management; but it *is* important the young sur-

geon should know, that *uniform pressure* of the limb is what is required. When this is effected, the ulcer is cured; when not effected, it remains. Whether this or that plaster, this or that roller, be used, is of little importance. Yet, I would not have any one therefore suppose that bandages require no trouble, or that their proper application is a matter of indifference; on the contrary, I know very well that many surgeons have been disappointed in their use from not having practised the proper method. Consequently, a few simple directions will not seem misplaced here.

First, the rollers should be composed of thin flannel or soft calico, the width and length varied according to the size of the part; generally narrow, because that form allows more perfect adaptation than when

the bandage is broad; and not longer than is necessary to encircle the limb completely, because all superfluous bandage will prove a source of heat and inconvenience.

In applying a roller, the surgeon will hardly forget the caution of John Bell, "not to make partial strictions by *rollers bound only round the diseased part;* but to be careful to support the parts generally, and to apply the roller from the very extremity."

Method of application.

Now, this excellent advice requires an explanation of the process of bandaging somewhat more detailed than its author has given. A roller, then, to the lower extremity should be applied, in the first place, around the toes, foot, and ankle; and that part of the leg below the ulcer should be bandaged with as much tightness as can

be borne without inconvenience. At this point it should be fastened with a pin or a few stitches; the roller should then be wound round that part of the leg on which the ulcer is situated, less tightly than around the first portion, but with firmness. This should also be fastened, and the remainder of the bandage twined round the upper part of the leg, so as to press the skin with a degree of force somewhat inferior to that with which we had applied it to either of the preceding parts of the limb.

The *rationale* of this practice must, of course, be obvious to any one who reflects on the state of the skin, and on the effects of the roller. I have already explained that we wish to *squeeze* the blood from the skin, that it may open for itself a course through the deeper-seated vessels; but if

the bandage be drawn with more tightness round the upper part of the limb, we merely restrain the return of blood through the superficial veins, and leave the inferior cutaneous vessels more completely gorged than before.

Plasters.

With respect to the use of plasters, upon which at present much stress is laid, it does not appear that their composition is of consequence in a medical point of view (provided they be not of an irritating nature), since, as we have no evidence of their being absorbed, they can have no general or local effects on the system.* Their tenacity is, however, a matter deserving of some consideration. Mr. Baynton

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* Exceptions to this rule exist, but they are few and trivial.

used a plaster composed of half a drachm of resin to an ounce of diachylon plaster; the one I employ consists of eight parts of diachylon plaster and one part of soap cerate, which I find sufficiently adhesive, at the same time that it is less irritating.

I do not believe that a limb incased in these plasters, previously to the application of the bandage, has the skin better supported than by the roller alone, if it be properly applied. But when a particular part is varicose, or where there is thickening of the periosteum, I generally apply over it a few strips of plaster; in the first instance, because they act as a compress, in causing greater pressure from the roller on the spot where they are situated—in the second, because the warm, excited state of the skin which they appear to induce is

found favourable to the dispersion of such swelling.

There is another use of plasters which I shall mention here, though not strictly in the right place—viz. to approximate the edges of an ulcer, and thereby reduce the quantity of the new skin, which is to be produced by the healing of the sore, (and which never is so sound nor so well organised as the old skin,) to the smallest dimensions. This was much and judiciously insisted on by Mr. Baynton. Of late years, an attempt has been made to represent him as mistaken in his views of the *modus operandi* of plasters; but that a plaster will draw the edges of an ulcer together, that this will heal while so covered, and that, when healed, the new skin will be less than it would have been if the

sore had been left to its natural dimensions—are propositions so evident that they cannot be controverted.

Plasters are sometimes put on sores when the limb is not bandaged—but rarely, I think, with advantage. When they do good, it is by acting as mechanical stimuli to the ulcer; there being little doubt that pressure exerts an influence in quickening the reparative process of some ulcers, independently of its power in relieving the engorgement of the cutaneous vessels.

ULCERS CHARACTERISED BY MORBID APPEARANCES OF THEIR SURFACES.

We now come to the consideration of those ulcers which deviate from the regular type in the appearance of their surfaces and in the nature of their discharges.

Deviations of this kind occur, as must be known to most surgeons, with every alteration in the supply of blood to the limb, with every change in the general health of the patient; so that a few extra glasses of wine will often transform a clean, granulating, suppurating sore into one that discharges ichor or blood; and again, the operation of a bandage commonly improves the appearance of the surface and the dis-

charge in a remarkable manner. I do not speak of such cases. But there are ulcers which are old and have a constant character. They have, for the most part, one discharge, one peculiar state of surface—often a constant smell. Every new kind of dressing you use alters them for a while; but they have a tendency to relapse into their habitual condition. Constitutional remedies affect them but little; mercury, arsenic, iodine, all influence them only for a few days. It is only, however, by long acquaintance that we become familiar with the nature of such sores; for their appearance does not differ essentially from that of many others dependent on chronic inflammation of the part, or general disturbance of the constitution.

It is only when we find that the case has Habitual ulcer.

lasted for years—that we have given constitutional remedies with but temporary benefit—that the long farrago of plaster and counter plaster, and of bandages "judiciously applied," have failed, even in the hands of their most devoted admirers—that we discover that we have to deal with what we may denominate the *habitual* ulcer. Now I do not wish to use this term to express an ulcer always inveterate, for some of them we can, with very slight means, succeed in curing; nor do I pretend that this kind of ulcer is not occasionally the subject of acute inflammation, and requires antiphlogistic remedies; nor that it is always so independent of chronic engorgement, that a bandage may not do it much good. All that I wish to impress on the reader's attention is the circumstance

that, independently of any perceptible chronic inflammation — independently also of constitutional disturbance — there occur ulcers which pour forth a morbid discharge entirely from *habit* — this habit varying, of course, in intensity, from being so slight in degree that a few applications of a stimulating wash remove it, to being absolutely incurable.

Habit in general.

All surgeons must be familiar with the occasionally untoward effect of habit in keeping up disease, as well as with the utility of the law in the healthy processes of the animal economy; and none practically acquainted with the duties of their profession will deny that it is very difficult of control. How intractable gleet is occasionally! Long after every particle of disease is eradicated, and while the constitution is quite

robust, this urethral discharge continues to torment a patient for weeks or months, solely from the *force of habit*. It is true that, by trial of a great variety of medicines, we have come to find agents capable of changing this habit in the majority of instances; but still there are gleets that are incurable, as well as weak eyes and chronic catarrhs.

One remarkable circumstance connected with this continuance of disease from habit is, that we find, by experience, if the part affected undergoes a violent stimulation, the habit is oftentimes broken through;—wherefore this should happen, does not appear; but the singular fact is well known. It is also curious, that in cases apparently precisely similar, a remedy which cures in one does no good in another—nay, that in

the same case, a remedy which has failed at one time may at a future period be attended with success. This explains the origin of that strange catalogue of cures for ulcers so forcibly drawn out by John Bell, in the following passage:—

"It is impossible," he says, "to be serious while we enumerate the thousand remedies which have been applied to ulcers —not that our disappointment in removing so afflicting a complaint can be matter for ridicule—but the vain boastings of self-sufficient inventors surely are so. Ulcers have been dressed with precipitate, calomel, alum, vitriol, zinc, verdigris, pulvis sabinæ, and other devilish drugs; they have been powdered with sugar, chalk, charcoal, assafœtida, and other innocent drugs; they have been plastered with turpentines, balsams,

mel mercuriale, decoctions of walnut leaves in sugar (which Belloste protests to be a medicine so powerful that no ulcer can resist it). I have seen ulcers extending from the os ischium to the ham, or covering the whole back or thigh — dressed with what? why, with garlick and spirits! while others have thought fit to dress them like warts, with fasting spittle, or raw beef, or the gastric juice. Ulcers have been squeezed into good humour by compresses and firm bandaging, strong sticking plasters, plates of lead upon the shins, sponges, cakes of Paris plaster, &c.; or bladders have been fixed about ulcers full of fixed air, carbonic air, vital air: what is there, indeed, that has not been tried?"

There is no method of reconciling these jarring testimonies, except by adopting one

of the two following suppositions :—either that the substances mentioned never did any good, but that the patients recovered spontaneously, which those who have seen the marked effect of some of them cannot believe; or that the peculiar sort of stimulation which an ulcer requires *to change its habit* varies with almost every case, and is so capricious that it can be reduced to no fixed rule. Therefore, the most successful practice appears to be—not rashly to abandon any article which has been several times found of use—but out of this ample armoury of weapons to select many, and having tried one, change it for another, and so on, until we meet with that which answers; an empirical mode of procedure, certainly, but the only one that is open to us.

But, while we thus follow rigidly the safe path of experiment, we may endeavour to make some advances towards a true pathological theory of ulceration, although we should not suffer it, while in an imperfect state, to bias our practice. Thus, with regard to the point in question, I conceive we shall probably approach nearer to an explanation of the occasionally good effects of the conflicting methods of treatment just described, if we discover what precise vessels the tendency to habitual morbid discharge inhabits. Are these such as form the granulating surface, and which may be assumed to be the open-mouthed secernents? Or are they such as grow in the indurated cellular tissue that forms the deeper layer of the ulcer's cup? Or, lastly, the remoter vessels of the surrounding

Structures occupied by ulcers.

parts?—Now, that the secernent vessels vary in the products which they fabricate from the blood, appears a fair inference; for, without any apparent change in the blood or blood-vessels, we find abundant discharges formed from the mucous surfaces, in pyrosis, &c. Yet, that the state of the blood-vessels is never altered without producing an influence on the secreting vessels they supply, is very evident, since no part is ever inflamed (*i. e.* seems to be filled with larger and more numerous blood-vessels than ordinary), but the secreting functions are altered, the secreted matters being either increased, diminished, suppressed, or changed in appearance.

We may presume then, I think, that all the preceding conditions obtain; that sometimes the unhealthy secretions of a sore

result from the morbid action of the secernents which separate pus from the blood—sometimes from the disordered condition of those vessels which carry the blood to the said secernents—and sometimes from the state of a third part, which is, I think, worthy of particular notice. We observe, on dissecting, or we may say *bi*secting, an ulcer, a condensation of the cellular tissue forming its basin, and which is the medium of communication between the blood-vessels and the purulent secernents. It is not too much to suppose that this has some influence on the formation of the pus and granulating structure, since it is constantly met with when such are forming.

If these views be correct, the process of reparative ulceration may be disturbed by the faulty action of three distinct struc-

tures; and hence very dissimilar applications may succeed in remedying the unhealthy nature of such sores. If, for example, the morbid secretion and the ill condition of the granulations arise from too great action of the blood-vessels, we can conceive that the means described as applicable to the various forms of inflammation will correct both these. If, on the contrary, the granulating surface has taken on a wrong action, it is not surprising that any extra stimulus should restore them to their proper state, since that is the usual effect of stimulation on all surfaces undergoing chronic discharge. And, lastly, should the condensed portion of the ulcer, which has almost a glandular structure, and which very slowly undergoes absorption, acquire an habitual action, it is to be expected that remedies of

all kinds will operate but slowly, and that many very efficacious in the two states first mentioned will here be useless.

It is, of course, impossible to do more than indicate the nature of the divisions in question, the symptoms that distinguish them being but faintly marked. Indeed, I may say, we rather form notions as to the character of sores from the undefined impressions of our general experience, than from any positively described marks,—a tact or instantaneous judgment being formed in this, as in other cases, which practical men can feel, though unable to define.

Paleness of the granulations, or exuberance, with thin discharge, appears to characterise the state in which the fault is in the surface.

Secernent structure.

The astringent lotions, as the solution of

sulphate of copper, zinc, or alum, are, when we have superfluous and spongy granulations, almost always efficacious. But the truth is, in such cases, though the rule is constant, that astringent and stimulating applications are the proper means of cure, they must be varied, and that capriciously, for out of a thousand different kinds no one is uniform in its effects.

Blood-vessels.

As to the appearance and treatment of those ulcers in which the red vascular system is in fault, enough has been stated in a previous part of this work.

Cellular tissue.

The cases in which the morbid condition of the condensed cellular tissue forming the cup of the ulcer appears to be the cause of continuance of the disease, are distinguished by the induration of the edges, the scantiness of the secreted matter, and

the insensibility of the sore. There can be little doubt that bandaging and various stimuli have some effect on the cellular structure in question, as well as on the sanguineous and secernent vessels; but there are two agents which I find of particular efficacy in removing the more obstinate peculiarities of such cases. These are mercury and iodine. The former is well known to possess the power of lessening induration when given internally, and some have thought that the same efficacy is attached to its local application. After much experience, I am, however, brought to the conclusion, that mercurial dressings are void of any specific utility analagous to the constitutional action of the remedy; that they stimulate in peculiar modes, but perform no important part in

Mercury and iodine.

effecting the removal of indurated cellular tissue. The local effect of mercury is extremely great in changing the character of sores in general, and in the form I am describing, it is very salutary. We shall find, however, that if its action be not immediate, no good purpose will be answered by its continued employment.

Iodine, internally administered or externally applied, and even in those forms which have lately been described as inefficacious, I have always found of great service in removing this species of induration. It often requires to be used for a tedious length of time, to be remitted should it produce much constitutional derangement, and again employed when the state of the general health will permit. I have not met with a case in which iodine has failed to remove the in-

duration; but if such were to occur, it would perhaps be advisable to remove the indurated structure with the knife. This has been done, and certainly with perfect success, the new wound healing rapidly. But so decisive a practice would only be justifiable where every other method had repeatedly failed.

Muscular structure & periosteum.

The indurated structure occurs also in muscular parts, and on the periosteum. In the former, however, it is never stationary for any considerable length of time. In the latter, when it is sufficiently tedious, mercury and iodine are remedies as potent as when it is seated in the cellular tissue.

Fascia.

There is an opinion of John Bell, as to the state of a particular structure in ulceration, which does not appear to be characterised by the accuracy which usually

belongs to the observations of that clear and impressive writer. He says, "You will very commonly find the general fascia or tendinous sheath which covers the muscles much concerned in ulcer; and I am persuaded that the unyielding nature of this part, more frequently than any other cause, protracts the cure. An ulcer seldom penetrates deeper than the skin, it is seldom able to perforate the fascia; it is the ill condition of this insensible part that makes a sore continue throwing off sloughs for months, and spreading continually; for this tendinous sheath which lies under the skin being dead, deprives the skin of nourishment, by destroying the intermediate vessels: the skin cannot close over a part that is dead, any more than flesh can close over a carious bone; nor can it continue sound at its

edges, since its edges lie over the dead fascia, unconnected with it, and no longer nourished by vessels. The skin thus shrinks from a part with which it can hold no connexion; and the inflammation and the matter, working backwards in every direction, destroy more and more the cellular substance which lies between the fascia and the skin. This, I know, is the condition of most of those sailors' ulcers and hospital sores which I have seen. What can a sprinkling of precipitate, or of some drug more insignificant, do in such a disease? The fascia, when once brought into this condition, is like a diseased bone—its connexions are strong, it does not slough off soon, but keeps its place.

"When we clean such a sore, of perhaps three or four hands' breadth, we cannot

but remark the strong analogy betwixt the matter which it discharges, and the stuff which we scrape off from an anatomical preparation; for there also it is the fascia belonging to the interstices of the muscles that produces that foul matter which causes us so much pains to clear away. Upon removing the cream-like stuff from the surface of a deep ulcer, we see the fascia covering the bottom like a sheet of soaked chamois leather: with such a bottom as this, the ulcer can never heal; the fascia itself is dead, and will never recover; it sloughs off more slowly than even a diseased cartilage or bone. Now I know that this is often the impediment to the healing of great ulcers; that the ulcer is perpetuated only from this diseased and yet unyielding state of the fascia; and this has been the occasion of many

losing their legs; it is the very ulcer for which many men are reported incurable, and discharged the service. The habit which first produces such an ulcer is very bad; the ulcer itself, which extends so as to uncover the fascia in this manner, cannot be easily cured, although the fascia were cut away; but while it is left, the ulcer cannot heal; you must therefore learn to pare and clip the fascia; and it will be some encouragement to know that I have often cut it up with the knife, then pared the flaps with scissors, cleared the leg of it in a few days, and brought the ulcer very suddenly into a healthy and granulating state."

Now it would be too much to suppose that this long description arose out of mere fancy in the mind of John Bell; it is im-

possible but that he must have seen the appearances, in some cases—but certainly such is not the general character of a denuded fascia. This is always black when it mortifies, and sloughs off in a few days; but, when affected in a less violent degree, coagulable lymph is thrown off from it, which becomes hardened, and forms part of the basin of the ulcer. The vessels of the surrounding skin can be little influenced by the death of the fascia, since the majority of them merely pierce it. Lastly, the fasciæ of the body are continually being exposed, in various injuries, yet they heal without this "paring and cutting," which are never, I believe, practised in the present day.

ULCERS DEPENDENT ON CONSTITUTIONAL CAUSES.

All ulcers require that some attention should be paid to the general health. But there is a distinct class of ulcers which appear especially to owe their origin, or their continuance, to a disordered state of the constitution. The great test of ulcers of this kind is, that they are little affected by local applications, but change their character very rapidly when recourse is had to the administration of general remedies. The severe forms of phagedæna and gangrene generally originate from constitutional causes; but on the consideration of these I shall not at present enter, the affec-

tion of the system which accompanies them being very different from that which attends ordinary ulcers.

Although the term "constitutional disturbance" has obtained general currency among surgeons, the ideas attached to it, like most others in our present defective pathology, are rather vague.

Those who follow in the wake of the distinguished writer on the "Constitutional Origin of Local Diseases" understand, by it, nothing more than costiveness of the bowels—inaction of the liver—and those concomitant feelings which he included in the term "disorder of the digestive organs:" his immediate successors comprehend under the expression "constitutional derangement," acceleration of the pulse, heat of skin, and other symptoms considered in-

flammatory; but I apprehend the human constitution is disturbed in a much greater variety of ways. Every general poison produces its distinct local effects, and the same is true where infectious matter is introduced into the system. The effect too of remedies cannot always be explained, either by their operation on the bowels, or on the circulation. A purge will alter the character of a sore, often for the better, although the bowels are considered to be in a regular and healthy state; mercury produces very salutary effects under the same circumstances, although no deficiency in the secretion of bile may appear, nor any want of energy in the absorbents. Time and the progress of discovery will, probably, show us many morbid states of the blood, the nerves, and the other general systems,

with which we are now unacquainted. All we can at present do, with reference to this topic, is to observe carefully the local actions which follow the impression of general remedies, and note the curative effects which may ensue. I am convinced that our prevalent theories are too partial and confined to form unerring guides to practice, without this correction from empirical observation.

Without reference to the particular condition in which a patient's constitution happens to be, and the correction of which may be left to established rules, we may lay down these propositions, deduced from the appearance of local disease, as guides for our general treatment:—

1. Sores which are attended with much scabbing and exfoliation of the skin, which are dry and but little inflamed, are to be

treated, when we have recourse to constitutional remedies, with arsenic, small doses of sulphur, and such medicines as produce a decided impression on the mucous membranes, without exciting perceptible discharges.

2. Sores presenting an indurated character, or liable to excessive growth, are controlled most effectually by mercury, and perhaps chiefly by that quantity which has been described by Mr. Abernethy as producing a constitutional irritation short of ptyalism, but much greater than what is sufficient when this remedy is directed only to the correction of the biliary, intestinal, and cutaneous discharges. These are the cases also in which the judicious employment of iodine is recommended.

3. Sores attended with considerable dis-

charges, whether healthy or unhealthy, have such discharges diminished by the exhibition of quinine and sulphuric acid. In old persons, drunkards, and those who have been exposed to famine and the vicissitudes of the weather, mercury, in mild doses, combined with quinine, has seemed to me of particular advantage.

4. Sores with a sharp, black, incurved edge, approaching, in a remote degree, the phagedænic ulcer, and which are generally met with in intemperate persons, require, in the young and plethoric, bleeding and other antiphlogistic measures; in the aged and debilitated, rest, abstinence, slight purging, and indeed as great an approach to a lowering kind of treatment as the weak condition of the patient will allow. Let it be observed, however, that, whether in the

young or old, the debilitating plan admits only of a short continuance; and that when the sore is large, the exhibition of bark and other tonics is called for, even before its character is perceptibly changed.

Having indicated the most effectual methods of treating ulcers, a question arises, which is often agitated with more anxiety than it deserves by the patient, and considered with too little attention by the surgeon;—it is, the propriety of healing ulcers when they are so old, or present such characters, as to render their removal a probable cause of constitutional derangement.

Propriety of healing old ulcers.

Nothing is more common than to find serious affections of the internal organs succeed the repression of cutaneous eruption, or the healing of an old sore. That

such effects do not always occur when they might be most confidently expected, only shows the strength of that balancing power in the animal economy which varies its condition in such a measure as to counteract the effect of change. In young persons, the ill effects of the sudden repression of an eruption are more frequently apparent; at the same time, our power of counteracting them by remedial agents is decided. In old people, we have not so evident a command over the development of internal disease under these circumstances.

In fact, the instructions of surgical authors are, for the most part, confined to advising that we should pay attention to the state of the bowels, and prevent plethora by bleeding, when we suddenly heal an old ulcer.

I have known a case, where scrupulous

attention to these points was of no avail; and I am of opinion, that much more is required. The disagreeable nature of the discharges in the sores of old people, and their frequently breaking out in a second part when the first had been healed, seem to imply, that many such owe their origin to an impure state of the blood, to which fluid they act as emunctories or purifiers. It seems impossible to conceive how the profuse and fetid discharge which emanates from the ulcer of an old fat man, can be thrown into his circulation without producing serious consequences; and we cannot well understand how bleeding, or a little extra secretion from the bowels, can sufficiently purify the mass. I apprehend nothing can so effectually do this, as the temporary establishment of an artificial drain—it may be

safely and easily effected, and produces no material pain or inconvenience to the patient. This remedy, certainly, is somewhat out of fashion; but I am convinced it is one which must, from time to time, be revived, since its efficacy in counteracting chronic disease of various kinds is evident to daily observation, even had it not been established by the testimony of our predecessors. An issue on the thigh should, therefore, be employed when we are fearful of the above consequences; unless, indeed, the observation of Mr. Baynton on this topic may be considered worthy of recollection. He says, that "if any one should be inclined to use issues" (a practice which, by the way, he condemns, on theoretical grounds), "the consequences of repletion, or of the retention of accustomed discharges, may be as

effectually prevented by their insertion upon a superior extremity, as on either of the lower limbs; which, for obvious reasons, should not be subjected to any cause that may injure the absorbent system of those parts, or serve as a point from whence inflammation may extend."

At the same time, we must not omit strict attention to the constitutional treatment; by which I mean, not merely the exhibition of small doses of aperient medicines, but the use of such remedies as may procure copious secretions from the cutaneous and urinary systems, as well as from the biliary and intestinal organs.

FINIS.

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